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PREPARATIONS FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT
AND DEVELOPMENT ON THE BASIS OF GENERAL ASSEMBLY RESOLUTION
44/228 AND TAKING INTO ACCOUNT OTHER RELEVANT GENERAL ASSEMBLY
RESOLUTIONS: CROSS-SECTORAL ISSUES

Promoting sustainable human settlement development

(Section I, Chapter 6 of Agenda 21)

Text submitted by the Chairman on the basis of negotiations
held on document A/CONF.151/PC/100/Add.7

I. INTRODUCTION

1. At its third session, the Preparatory Committee considered the report of the Secretary-General of the Conference on human settlements (A/CONF.151/PC/43).
2. In decision 3/3, the Preparatory Committee welcomed the report and decided that human settlements should be treated as a distinct programme of Agenda 21; that its programme areas should address human settlements as a substantive framework for sustainable development; that programme areas such as atmosphere, land, coastal areas, freshwater and waste management should include the human settlement dimension; and that the views expressed by Governments on the report be reflected in Agenda 21 (A/46/48, vol. II, annex I).

3. In industrialized countries, the consumption patterns of cities are severely stressing the global ecosystem while settlements in the developing world need more raw material, energy, and economic development simply to overcome basic economic and social problems. Human settlement conditions in many parts of the world, particularly the developing countries are deteriorating mainly as a result of the low levels of investments in the sector attributable to the overall resource constraints in these countries. In the low-income countries for which recent data are available, an average of only 5.6 per cent of central government expenditure went to housing, amenities, social security and welfare. 1/ Expenditure by international support and finance organizations is equally low. For example, only 1 per cent of the United Nations system's total grant-financed expenditures in 1988 went to human settlements 2/ while in 1991, loans from the World Bank and the International Development Association (IDA) for urban development and water supply and sewerage amounted to 5.5 and 5.4 per cent, respectively, of their total lending. 3/

4. On the other hand, available information indicates that technical cooperation activities in the human settlement sector generate considerable public and private sector investment. For example, every dollar of UNDP technical cooperation expenditure on human settlements in 1988 generated a follow-up investment of US\$ 122, the highest of all UNDP sectors of assistance. 4/

5. This is the foundation of the "enabling approach" advocated for the human settlement sector. External assistance will help to generate the internal resources needed to improve the living and working environments of all people by the year 2000 and beyond, including the growing number of unemployed - the no-income group. At the same time the environmental implications of urban development should be recognized and addressed in an integrated fashion by all countries with high priority being given to the needs of the urban and rural poor, the unemployed and the growing number of people without any source of income.

Human settlement objective

6. The overall human settlement objective is to improve the social, economic and environmental quality of human settlements and the living and working environments of all people, in particular the urban and rural poor. Such improvement should be based on technical cooperation activities, partnerships among the public, private and community sectors and participation from community groups and special interest groups such as women, indigenous people, the elderly and the disabled. These approaches should form the core principles of national settlement strategies. In developing these strategies, countries will need to set priorities among the eight programme areas in this document in accordance with their national plans and objectives taking fully into account their social and cultural capabilities. Furthermore, countries should make appropriate provision to monitor the impact of their strategies on marginalized and disenfranchised groups with particular reference to the needs of women.

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7. The programme areas included in this chapter are:

- (a) Providing adequate shelter for all;
- (b) Improving human settlement management;
- (c) Promoting sustainable land use planning and management;
- (d) Promoting the integrated provision of environmental infrastructure: water, sanitation, drainage, hazardous and solid waste management;
- (e) Promoting sustainable energy and transport systems in human settlements;
- (f) Promoting human settlement planning and management in disaster-prone areas;
- (g) Promoting sustainable construction industry activities;
- (h) Promoting human resource development and capacity-building for human settlement development.

II. PROGRAMME AREAS

A. Providing adequate shelter for all

1. Basis for action

8. Access to safe and healthy shelter is essential to a person's physical, psychological, social and economic well-being and should be a fundamental part to national and international action. The right to adequate housing as a basic human right is enshrined in the Universal Declaration of Human Rights and the International Covenant on Economic, Social and Cultural Rights. Despite this, it is estimated that at the present time, at least 1 billion people do not have access to safe and healthy shelter and that if appropriate action is not taken, this number will increase dramatically by the end of the century and beyond.

9. A major global programme to address this problem is the Global Strategy for Shelter to the Year 2000, adopted by the General Assembly in December 1988 (resolution 43/181, annex). Despite its widespread endorsement, the Strategy needs a much greater level of political and financial support to enable it to reach its goal of facilitating adequate shelter for all by the end of the century and beyond.

2. Objective

10. The objective is to achieve adequate shelter for rapidly growing populations and for the currently deprived urban and rural poor through an enabling approach to shelter development and improvement which is environmentally sound.

3. Activities

11. The following activities should be undertaken:

(a) As a first towards the goal of "providing adequate shelter for all" all countries should take immediate measures to provide shelter to their homeless poor, while the international community and financial institutions should undertake actions to support the efforts of the developing countries to provide shelter to the poor;

(b) All countries should adopt and/or strengthen national shelter strategies with targets as appropriate based on the principles and recommendations contained in the Global Strategy for Shelter to the Year 2000. People should be protected by law against unfair eviction from their homes or land;

(c) All countries should, as appropriate, support the shelter efforts of the urban and rural poor, the unemployed and the no-income group by adopting and/or adapting existing codes and regulations, to facilitate their access to land, finance and low-cost building materials and by actively promoting the regularization and upgrading of informal settlements and urban slums as an expedient measure and pragmatic solution to the urban shelter deficit;

(d) All countries should, as appropriate, facilitate access of urban and rural poor to shelter by adopting and utilizing housing and finance schemes and new innovative mechanisms adapted to their circumstances;

(e) All countries should support and develop environmentally compatible shelter strategies at national, state/provincial, and municipal levels for through partnerships among the private, public, and community sectors and with the support of community-based organizations;

(f) All countries, especially developing ones, should, as appropriate, formulate and implement programmes to reduce the impact of the phenomenon of rural to urban drift by improving rural living conditions;

(g) All countries, where appropriate, should develop and implement resettlement programmes which address the specific problems of displaced populations in their respective countries;

(h) All countries should, as appropriate, document and monitor the implementation of their national shelter strategies by using, inter alia, the monitoring guidelines adopted by the Commission on Human Settlements and the shelter performance indicators being produced jointly by the United Nations Centre for Human Settlements (Habitat) and the World Bank;

(i) Bilateral and multilateral cooperation should be strengthened in order to support the implementation of the national shelter strategies of developing countries;

(j) Global progress reports covering national action as well as support activities of international organizations and bilateral donors should be produced and disseminated on a biennial basis as requested by the Global Shelter Strategy for the Year 2000.

4. Means of implementation

(a) Financing and cost evaluation

[12. The total requirements for obtaining adequate shelter conditions for the urban and rural poor by the year 2000 are about US\$ 75 billion annually, to be financed primarily from household, community and national resources. About US\$ 10 billion per year in external financing will be needed.]

[13. Annual support costs for strengthening international institutions in support of the Strategy's programme of action are estimated at US\$ 10 million per year, a portion of which will be needed by the United Nations Centre for Human Settlements (Habitat), to support its role as the agency designated by the General Assembly as the secretariat for the Strategy.]

(b) Scientific and technological means

14. The requirements under this heading are addressed in each of the other programme areas included in the present chapter.

(c) Human resource development and capacity-building

[15. Developed countries and funding agencies should provide specific assistance to developing countries in adopting an enabling approach to the provision of shelter for all, including the no-income group, and covering research institutions and training activities for government officials, professionals, communities and non-governmental organizations and by strengthening local capacity for the development of appropriate technologies.]

B. Improving human settlement management

1. Basis for action

16. By the turn of the century, the majority of the world's population will be living in cities. While urban settlements, particularly in developing countries, are showing many of the symptoms of the global environment and development crisis, they nevertheless generate 60 per cent of gross national product and, if properly managed, can develop the capacity to sustain their productivity, improve the living conditions of their residents and manage natural resources in a sustainable way.

17. Some metropolitan areas extend over the boundaries of several political and/or administrative entities (counties and municipalities) even though they conform a continuous urban system. In many cases this political heterogeneity hinders the implementation of comprehensive environmental management programmes.

2. Objectives

18. The objectives are to ensure sustainable management of all urban settlements, particularly in developing countries, in order to enhance their ability to improve living conditions of residents, especially the marginalized and disenfranchised, thereby contributing to the achievement of national economic development goals.

3. Activities

(a) Improve urban management

19. One existing framework for strengthening management is in the United Nations Development Programme/World Bank/United Nations Centre for Human Settlements (Habitat) Urban Management Programme (UMP), a concerted global effort to assist developing countries in addressing urban management issues. Its coverage should be extended to all interested countries during the period 1993-2000. All countries should as appropriate, and in accordance with national plans, objectives and priorities and with the assistance of NGOs and representatives of local authorities, undertake the following activities at the national, state/provincial, and local levels with the assistance of relevant programmes and support agencies:

(a) Adopt and apply urban management guidelines in the areas of land management, urban environmental management, infrastructure management and municipal finance and administration;

(b) Accelerate efforts to reduce urban poverty through a number of actions, including:

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- (i) Generate employment for the urban poor, particularly women, through the provision, improvement and maintenance of urban infrastructure and services and the support of economic activities in the informal sector, such as repairs, recycling, services and small commerce;
- (ii) Provide specific assistance to the poorest of the urban poor through, inter alia, the creation of social infrastructure in order to reduce hunger and homelessness, and the provision of adequate community services;
- (iii) Encourage the organization of indigenous community-based organizations, private voluntary organizations, and other forms of non-governmental entities which can contribute efforts to reduce poverty and improve the quality of life for low-income families;
- (c) Adopt innovative city planning strategies to address environmental and social issues by:
 - (i) Reducing subsidies on, and recovering full costs of, high standard environmental and other services (e.g. water supply, sanitation, waste collection, roads, telecommunications) provided to higher income neighborhoods;
 - (ii) Improving the level of infrastructure and service provision in poorer urban areas;
 - (d) Develop local strategies for the improvement of the quality of life and the environment, integrating decisions for land use and land management, investment in public and private sectors, as well as mobilize human and material resources, thereby promoting employment generation which is environmentally sound and protective of human health.

(b) Strengthen urban data systems

20. All countries should undertake during the period 1993-2000 with the active participation of the business sector as appropriate pilot projects in selected cities for the collection, analysis and subsequent dissemination of urban data including environmental impact analysis, at the local, state/provincial, national and international levels and the establishment of city data management capabilities. 5/ United Nations organizations such as Habitat, UNEP and UNDP could provide technical advice and model data management systems.

(c) Encourage intermediate city development

21. In order to relieve pressure on large urban agglomerations of developing countries, policies and strategies should be implemented towards the development of intermediate cities which create employment opportunities for unemployed labour in the rural areas and support rural-based economic activities, although sound urban management is essential to ensure that "urban sprawl" does not expand resource degradation over an ever wider land area and

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increase pressures to convert open space and agricultural/buffer lands for development.

22. For this purpose, all countries should, as appropriate, conduct reviews of urbanization processes and policies in order to assess environmental impacts of growth and apply urban planning and management approaches specifically suited to the needs, resource capabilities and characteristics of their growing intermediate-sized cities. As appropriate, they should also concentrate on activities aimed at facilitating the transition from rural to urban lifestyles and settlement patterns and at promoting the development of small-scale economic activities, particularly the production of food, to support local income generation and the production of intermediate goods and services for rural hinterlands.

23. All cities, particularly those characterized by severe sustainable development problems, should in accordance with national laws, rules and regulations develop and strengthen programmes aimed at addressing such problems and guiding their development along a sustainable path. Some international initiatives in support of such efforts as in the Sustainable Cities Programme of the United Nations Centre for Human Settlements (Habitat) and the Healthy Cities Programme of the World Health Organization (WHO) should be intensified. Additional initiatives involving the World Bank, the regional development banks and bilateral agencies as well as other interested stakeholders, particularly international and national representatives of local authorities should be strengthened and coordinated. Individual cities should, as appropriate:

(a) Institutionalize a participatory approach to sustainable urban development, based on a continuous dialogue between the actors involved in urban development (public sector, private sector and communities), especially women and indigenous people;

(b) Improve the urban environment by promoting social organization and environmental awareness through the participation of local communities in the identification of public services needs, the provision of urban infrastructure, the enhancement of public amenities and the protection and/or rehabilitation of older buildings, historic precincts and other cultural artifacts. In addition, "green works" programmes should be activated to create self-sustaining human development activities and both formal and informal employment opportunities for low-income urban residents;

(c) Strengthen the capacities of their local governing bodies to deal more effectively with the broad range of developmental and environmental challenges associated with rapid and sound urban growth through comprehensive approaches to planning which recognize the individual needs of cities and which are based on ecologically sound urban design practices;

(d) Participate in international "sustainable city networks" to exchange experiences and mobilize national and international technical and financial support;

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(e) Promote the formation of environmentally sound and culturally sensitive tourism programmes as a strategy of sustainable development of urban and rural settlements and as a way of decentralizing urban development, and of reducing discrepancies among regions;

(f) Establish mechanisms with the assistance of relevant international agencies to mobilize resources for local initiatives for improvements in environmental quality;

(g) Empower community groups, non-governmental organizations and individuals to assume the authority and responsibility for managing and enhancing their immediate environment through participatory tools, techniques and approaches embodied in the concept of environmental care.

24. Cities of all countries should reinforce cooperation among themselves and cities of the developed countries, under the aegis of non-governmental organizations active in this field, such as the International Union of Local Authorities (IULA), the International Council for Local Environmental Initiatives (ICLEI) and the World Federation of Twin Cities.

4. Means of implementation

(a) Financing and cost evaluation

[25. Total annual requirements, primarily for infrastructure maintenance and operations for municipal services in developing countries are roughly estimated at US\$ 100 billion, to be financed mostly by revenues. The total external financial and technical assistance required is estimated at about US\$ 15 billion per year. About US\$ 10 million would be needed for strengthening international institutions.]

(b) Human resource development and capacity-building

26. Developing countries should, with appropriate international assistance, consider focusing on training and developing a cadre of urban managers, technicians, administrators and other relevant stakeholders needed to successfully manage environmentally sound urban development and growth and equipped with the skills necessary to analyse and adapt innovative experiences of other cities. For this purpose, the full range of training methods - from formal education to the use of the mass media - should be utilized, as well as the "learning by doing" option.

27. Developing countries should also encourage technological training and research through joint efforts by donors, non-governmental organizations and private business in such areas as the reduction of waste, water quality, saving of energy, safe production of chemicals and less polluting transportation.

28. Capacity-building activities carried out by all countries, assisted as suggested above, should go beyond the training of individuals and functional groups to include institutional arrangements, administrative routines, inter-agency linkages, information flows and consultative processes.

29. In addition, international efforts such as the Urban Management Programme, in cooperation with multilateral and bilateral agencies, should continue to assist the developing countries in their efforts to develop a participatory structure by mobilizing the human resources of the private sector, non-governmental organizations and the poor, particularly women and the disadvantaged.

C. Promoting sustainable land use planning and management

1. Basis for action

30. Access to land resources is an essential component of sustainable low impact lifestyles. Land resources are the basis for (human) living systems and provide soil, energy, water and the opportunity for all human activity. In rapidly growing urban areas, access to land is rendered increasingly difficult by the conflicting demands of industry, housing, commerce, agriculture, land tenure structures and the need for open spaces. Furthermore, the rising costs of urban land prevent the poor from gaining access to suitable land. In rural areas, unsustainable practices, such as the exploitation of marginal lands and the encroachment on forests and ecologically fragile areas by commercial interests and landless rural populations, result in environmental degradation as well as in diminishing returns for impoverished rural settlers.

2. Objective

31. The objective is to provide for the land requirements of human settlement development through environmentally sound physical planning and land use so as to ensure access to land to all households.

3. Activities

32. All countries should consider, as appropriate, undertaking a comprehensive national inventory of their land resources in order to establish a land information system in which land resources will be classified according to their most appropriate uses and environmentally fragile or disaster-prone areas will be identified for special protection measures.

33. Subsequently, all countries should consider developing national land-resource management plans to guide land-resource development and utilization as follows:

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(a) Establish, as appropriate, national legislation to guide the implementation of public policies for environmentally sound urban development, land utilization, housing and for the improved management of urban expansion;

(b) Create, where appropriate, efficient and accessible land markets which meet community development needs by, inter alia, improving land registry systems and streamlining procedures in land transactions;

(c) Develop fiscal incentives and land-use control measures, including land-use planning solutions for a more rational and environmentally sound use of limited land resources;

(d) Encourage partnerships among the public, private and community sectors in managing land resources for human settlements development;

(e) Strengthen community-based land-resource protection practices in existing urban and rural settlements;

(f) Establish appropriate forms of land tenure which provide security of tenure for all land-users, especially indigenous people, women, local communities, the low-income urban dwellers and the rural poor;

(g) Accelerate efforts to promote access to land by the urban and rural poor, including credit schemes for the purchase of land and for building/acquiring or improving safe and healthy shelter and infrastructure services;

(h) Develop and support the implementation of improved land management practices which deal comprehensively with potentially competing land requirements for agriculture, industry, transport, urban development, green spaces, preserves and other vital needs;

(i) Promote understanding among the policy makers of the adverse consequences of unplanned settlements in environmentally vulnerable areas and of the appropriate national and local land use and settlements policies required for this purpose.

34. At the international level, global coordination of land resource management activities should be strengthened by the various bilateral and multilateral agencies and programmes such as UNDP, FAO, the World Bank, the regional development banks, other interested organizations and the UNDP/World Bank/United Nations Centre for Human Settlements (Habitat) Urban Management Programme, and action taken to promote the transfer of applicable experience on sustainable land-management practices to and among developing countries.

4. Means of implementation

(a) Financing and cost evaluation

[35. The overall cost is about US\$ 3 billion annually, including about US\$ 300 million from the international community. About US\$ 4 million will be needed for strengthening international organizations. Some aspects of this programme may be funded under the land use programmes detailed in other Agenda 21 chapters. These programmes should be funded in an integrated fashion.]

(b) Scientific and technological means

36. All countries, particularly developing countries, alone or in regional or subregional groupings, should be given access to modern techniques of land-resource management, such as geographical information systems, satellite photography/imagery and other remote-sensing technologies.

(c) Human resource development and capacity-building

37. Environmentally focused training activities in sustainable land resources planning and management should be undertaken in all countries with developing countries being given assistance through international support and funding agencies in order to:

(a) Strengthen the capacity of national, state/provincial, and local educational research and training institutions to provide formal training of land management technicians and professionals;

(b) Facilitate the organizational review of government ministries and agencies responsible for land questions, in order to devise more efficient mechanisms of land-resource management, and carry out periodic in-service refresher courses for their managers and staff in order to familiarize them with up-to-date land-resource management technologies;

(c) Where appropriate, equip those agencies with modern equipment, such as computer hardware and software and survey equipment;

(d) Strengthen existing programmes and promote an international and interregional exchange of information and experience in land management through the establishment of professional associations in land management sciences and related activities, such as workshops and seminars.

D. Promoting the integrated provision of environmental infrastructure: water, sanitation, drainage and solid waste management

1. Basis for action

38. The sustainability of urban development is defined by many parameters relating to the availability of water supplies, air quality and the provision of environmental infrastructure for sanitation and waste management. As a result of the density of users, urbanization, if properly managed, offers unique opportunities for the supply of sustainable environmental infrastructure through adequate pricing policies, educational programmes and equitable access mechanisms which are economically and environmentally sound. In most developing countries, however, the inadequacy and lack of environmental infrastructure is responsible for widespread ill-health, and a large number of preventable deaths each year. In those countries conditions are set to worsen due to growing needs beyond governments' capability to respond adequately.

39. An integrated approach to the provision of environmentally sound infrastructure in human settlements, in particular for the urban and rural poor, is an investment in sustainable development which can result in improvement to the quality of life, increase productivity, improve health and reduce the burden of investments in curative medicine and poverty alleviation.

40. Most of the activities whose management would be improved by an integrated approach, are covered in Agenda 21 as follows: section I, chapter 5 (Protection and promotion of human health conditions) and section II, chapters 1 (Protecting the atmosphere), 10 (Protection of the quality and supply of freshwater resources) and 13 (Environmentally sound management of solid wastes and sewage-related issues).

2. Objective

41. The objective is to ensure the provision of adequate environmental infrastructure facilities in all settlements by the year 2025. The achievement of this objective would require that all developing countries incorporate in their national strategies programmes to build the necessary technical, financial and human resource capacity aimed at ensuring better integration of infrastructure and environmental planning by the year 2000.

3. Activities

42. All countries should assess the environmental suitability of infrastructure in human settlements, develop national goals for sustainable management of waste, and implement environmentally sound technology to ensure that the environment, human health and quality of life are protected. Settlement infrastructure and environmental programmes designed to promote an

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integrated human settlements approach to the planning, development, maintenance and management of environmental infrastructure (water supply, sanitation, drainage, solid waste management) should be strengthened with the assistance of bilateral and multilateral agencies. Coordination among these agencies and with collaboration from international and national representatives of local authorities, the private sector, and community groups should also be strengthened. The activities of all agencies engaged in providing environmental infrastructure should, where possible, reflect an ecosystem or metropolitan area approach to settlements and should include monitoring, applied research, capacity-building, transfer of appropriate technology and technical cooperation among the range of programme activities.

43. Developing countries should be assisted at the national and local levels in adopting an integrated approach to the provision of water supply, energy, sanitation, drainage and solid waste management and external funding agencies should ensure that this approach is applied in particular to environmental infrastructure improvement in informal settlements based on regulations and standards that take into account the living conditions and resources of the communities to be served.

44. All countries should, as appropriate, adopt the following principles for the provision of environmental infrastructure:

(a) Adopt policies that minimize if not altogether avoid environmental damage, whenever possible;

(b) Ensure that all decisions are preceded by environmental impact assessments and also take into account the costs of any ecological consequences;

(c) Promote development in accordance with indigenous practices and adopt technologies appropriate to local conditions;

(d) Promote policies aimed at recovering the actual cost of infrastructure services, while at the same time recognizing the need to find suitable approaches (including subsidies) to extend basic services to all households;

(e) Seek joint solutions to environmental problems which affect several localities.

45. The dissemination of information from existing programmes should be facilitated and encouraged among interested countries and local institutions.

4. Means of implementation

(a) Financing and cost evaluation

[46. Financial requirements for major development programmes are estimated in other chapters, especially those dealing with health, energy, freshwater resources, sanitation and solid wastes. Annual technical assistance requirements for the settlement infrastructure environmental programmes are estimated at about US\$ 50 million; US\$ 3 million will be needed to strengthen international institutions.]

(b) Scientific and technological means

47. Scientific and technological means within the existing programmes should be coordinated wherever possible and should:

(a) Accelerate research in the area of integrated policies of environmental infrastructure programmes and projects based on cost-benefit analysis and overall environmental impact;

(b) Promote methods of assessing "effective demand", utilizing environmental and developmental data as criteria for technology choice.

(c) Human resource development and capacity-building

48. With the assistance and support of funding agencies, all countries should, as appropriate, undertake training and popular participation programmes aimed at:

(a) Raising awareness of the means, approaches and benefits of the provision of environmental infrastructure facilities, especially among indigenous people, women, low-income groups and the poor;

(b) Developing a cadre of professionals with adequate skills in integrated infrastructural service planning and maintenance of resource efficient, environmentally sound and socially acceptable systems;

(c) Strengthening the institutional capacity of local authorities and administrators in the integrated provision of adequate infrastructure services in partnership with local communities and the private sector;

(d) Adopting appropriate legal and regulatory instruments, including cross-subsidy arrangements, to extend the benefits of adequate and affordable environmental infrastructure to unserved population groups, especially the poor.

E. Promoting sustainable energy and transport systems in human settlements

1. Basis for action

49. Most of the commercial and non-commercial energy produced today is used in, and for, human settlements and a substantial percentage of it is used by the household sector. Developing countries are presently faced with the need to increase their energy production to accelerate development and raise the living standards of their populations, while at the same time reducing energy production costs and energy-related pollution. Increasing the efficiency of energy use to reduce its polluting effects and to promote the use of renewable energies must be a priority in any action taken to protect the urban environment.

50. Developed countries, as the largest consumers of energy, are faced with the need for energy planning and management, promoting renewable and alternate sources of energy, and evaluating the life-cycle costs of current systems and practices as a result of which many metropolitan areas are suffering from pervasive air quality problems related to ozone, particulate matters and carbon monoxide. The causes have much to do with technological inadequacies and with an increasing fuel consumption generated by inefficiencies, high demographic and industrial concentrations and a rapid expansion in the number of motor vehicles.

51. Transport accounts for about 30 per cent of commercial energy consumption and for about 60 per cent of total global consumption of liquid petroleum. In developing countries, rapid motorization and insufficient investments in urban transport planning, traffic management and infrastructure, are creating increasing problems in terms of accidents and injury, health, noise, congestion and loss of productivity similar to those occurring in many developed countries. All of these problems have a severe impact on urban populations, particularly the low-income and no-income groups.

2. Objectives

52. The objectives are to extend the provision of more energy-efficient technology and alternative/renewable energy for human settlements and to reduce negative impacts of energy production and use on human health and on the environment.

3. Activities

53. The principal activities relevant to this programme area are included in Agenda 21 as follows: section II, chapter 1 (Protecting the atmosphere), programme area A (Promoting sustainable energy development) and programme area B (Promoting transport systems which are specifically safe and environmentally sound).

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54. A comprehensive approach to human settlements development should include the promotion of sustainable energy development in all countries, as follows:

- (a) Developing countries, in particular, should:
 - (i) Formulate national action programmes to promote and support reafforestation and national forest regeneration with a view to achieve sustained provision of the biomass energy needs of the low-income groups in urban areas and the rural poor, in particular women and children;
 - (ii) Formulate national action programmes to promote integrated development of energy saving and renewable energy technologies particularly for the use of solar, hydro, wind and biomass sources;
 - (iii) Promote wide dissemination and commercialization of renewable energy technologies through suitable measures, inter alia, fiscal and technology transfer mechanisms;
 - (iv) Carry out information and training programmes directed at manufacturers and users in order to promote energy saving techniques and energy efficient appliances;
- (b) International organizations should:
 - (i) Support developing countries in implementing national energy programmes in order to achieve widespread use of energy saving and renewable energy technologies, particularly the use of solar, wind, biomass and hydro sources;
 - (ii) Provide access to research and development results to increase energy use efficiency levels in human settlements.

55. Promoting efficient and environmentally sound urban transport systems in all countries should be a comprehensive approach to urban transport planning and management. For this all countries should:

- (a) Integrate land-use and transportation planning to encourage development patterns which reduce transport demand;
- (b) Adopt urban transport programmes favouring high-occupancy public transport in countries as appropriate;
- (c) Encourage non-motorized modes of transport by providing safe cycleways and footways in urban and suburban centres in countries as appropriate;
- (d) Devote particular attention to effective traffic management, to efficient operation of public transport and to maintenance of transport infrastructure;

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(e) Promote the exchange of information among countries and representatives of local and metropolitan areas;

(f) Re-evaluate the present consumption and production patterns in order to reduce energy and national resources use.

4. Means of implementation

(a) Financing and cost evaluation

[56. The financing for this programme area is included in the estimate for part II, chapter 1 of Agenda 21 (Protecting the atmosphere).]

(b) Human resource development and capacity-building

57. In order to enhance the skills of energy service and transport professionals and institutions, all countries should, as appropriate:

(a) Provide on-the-job and other training of government officials, planners, traffic engineers, and managers involved in the energy service and transport section;

(b) Raise public awareness about the environmental impacts of transport and travel behaviour through mass media campaigns and support for non-governmental and community initiatives promoting the use of non-motorized transport, shared driving and improved traffic safety measures;

(c) Strengthen regional, national, state/provincial, and private sector institutions that provide education and training on energy service and urban transport planning and management.

F. Promoting human settlement planning and management in disaster-prone areas

1. Basis for action

58. Natural disasters cause loss of life, disruption of economic activities and urban productivity - particularly for highly susceptible low-income groups, and environmental damage, such as loss of fertile agricultural land and contamination of water resources, and can lead to major resettlement of populations. Over the past two decades they are estimated to have caused some 3 million deaths and affected 800 million people. Global economic losses have been estimated by the Office of the United Nations Disaster Relief Coordinator to be in the range of US\$ 30-50 billion per year. 7/

59. The General Assembly, in resolution 44/236, proclaimed the 1990s as the International Decade for Natural Disaster Reduction. The goals of the Decade 8/ bear relevance to the objectives of the present programme area.

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60. In addition, there is an urgent need to address the prevention and reduction of man-made disasters and/or disasters caused by, inter alia, industries, unsafe nuclear power generation and toxic wastes (see section I, chapter 5 of Agenda 21 - Protection and promotion of human health).

2. Objective

61. The objective is to enable all countries, in particular those that are disaster-prone, to mitigate the negative impact of natural and man-made disasters on human settlements, national economies and the environment.

3. Activities

62. Three distinct areas of activity are foreseen under this programme area, namely the development of a "culture of safety", pre-disaster planning and post-disaster reconstruction.

(a) Develop a culture of safety

63. To promote a "culture of safety" in all countries, especially those that are disaster-prone, the following activities should be carried out:

(a) Complete national and local studies on the nature and occurrence of natural disasters, their impact on people and economic activities, the effects of inadequate construction and land use in hazard-prone areas, and the social and economic advantages of adequate pre-disaster planning;

(b) Implement nationwide and local awareness campaigns through all available media, translating the above knowledge into information easily comprehensible to the general public and to the populations directly exposed to hazards;

(c) Strengthen, and/or develop global, regional, national and local early warning systems to alert populations to impending disasters;

(d) Identify industrially based environmental disaster areas at the national and international levels and implement strategies aimed at the rehabilitation of these areas through, inter alia:

(i) Restructuring of the economic activities and promoting new job opportunities in environmentally sound sectors;

(ii) Promoting close collaboration between governmental and local authorities, local communities and non-governmental organizations and private business;

(iii) Developing and enforcing strict environmental control standards.

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(b) Develop pre-disaster planning

64. Pre-disaster planning should form an integral part of human settlement planning in all countries. The following should be included:

(a) Complete multi-hazard research into risk and vulnerability of human settlements and settlement infrastructure, including water and sewerage, communication and transportation networks, as one type of risk reduction may increase vulnerability to another (e.g., an earthquake resistant house made of wood will be more vulnerable to wind storms);

(b) Develop methodologies for determining risk and vulnerability within specific human settlements and incorporate risk and vulnerability reduction into the human settlement planning and management process;

(c) Redirect inappropriate new development and human settlements to areas not prone to hazards;

(d) Prepare guidelines on location, design and operation of potentially hazardous industries and activities;

(e) Develop tools (legal, economic etc.) to encourage disaster-sensitive development, including means of ensuring that limitations on development options are not punitive to owners, or incorporate alternative means of compensation;

(f) Further develop and disseminate information on disaster-resistant building materials and construction technologies for buildings and public works in general;

(g) Develop training programmes for contractors and builders on disaster-resistant construction methods. Some programmes should be directed particularly to small enterprises, which build the great majority of housing and other small buildings in the developing countries as well as for the rural populations which build their own houses;

(h) Develop training programmes for emergency site managers, non-governmental organizations and community groups which cover all aspects of disaster mitigation, including urban search and rescue, emergency communications, early warning techniques, and pre-disaster planning;

(i) Develop procedures and practices to enable local communities to receive information about hazardous installations or situations in these areas, and facilitate their participation in early warning and disaster abatement and response procedures and plans;

(j) Prepare action plans for the reconstruction of settlements, especially the reconstruction of community life-lines.

(c) Initiate post-disaster reconstruction and rehabilitation planning

65. The international community as a major partner in post-reconstruction and rehabilitation should ensure that the countries involved derive the greatest benefits from the funds allocated by undertaking the following activities:

(a) Carry out research on past experiences on the social and economic aspects of post-disaster reconstruction and adopt effective strategies and guidelines for post-disaster reconstruction with particular focus on development focused strategies in the allocation of scarce reconstruction resources, and on the opportunities which post-disaster reconstruction provides to introduce sustainable settlement patterns;

(b) Prepare and disseminate international guidelines for adaptation to national and local needs;

(c) Support efforts of national governments to initiate contingency planning, with participation of affected communities, for post-disaster reconstruction and rehabilitation.

4. Means of implementation

(a) Financing and cost evaluation

[66. External assistance will continue to be required for post-disaster investments, which are roughly estimated to run at about US\$ 600 million annually. Technical assistance connected with this programme area could cost about US\$ 50 million annually; US\$ 2 million is suggested for strengthening international organizations.]

(b) Scientific and technological means

67. Scientists and engineers specializing in this field in both developing and developed countries should collaborate with urban and regional planners in order to provide the basic knowledge and means to mitigate losses due to disasters as well as environmentally inappropriate development.

(c) Human resource development and capacity-building

68. Developing countries should conduct training programmes on disaster-resistant construction methods for contractors and builders, who build the majority of housing in the developing countries. This should focus on the small business enterprises, which build the majority of housing in the developing countries.

69. Training programmes should be extended to government officials and planners and community and non-governmental organizations to cover all aspects of disaster mitigation, such as early warning techniques, pre-disaster planning and construction, post-disaster construction and rehabilitation.

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G. Promoting sustainable construction industry activities

1. Basis for action

70. The activities of the construction sector are vital to the achievement of the national socio-economic development goals of providing shelter, infrastructure and employment. However, they can be a major source of environmental damage through depletion of the natural resource base, degradation of fragile eco-zones, chemical pollution and the use of building materials harmful to human health.

2. Objectives

71. The objectives are first, to adopt policies and technologies and to exchange information on them in order to enable the construction sector to meet human settlement development goals while avoiding harmful side-effects on human health and on the biosphere and, second, to enhance the employment-generation capacity of the construction sector. Governments should work in close collaboration with the private sector in achieving these objectives.

3. Activities

72. All countries should, as appropriate and in accordance with national plans, objectives and priorities:

(a) Establish and strengthen indigenous building materials industry, based as much as possible, on inputs of locally available natural resources;

(b) Formulate programmes to enhance the utilization of local materials by the construction sector by expanding technical support and incentive schemes for, increasing the capabilities and economic viability of small-scale and informal operatives who make use of these materials and traditional construction techniques;

(c) Adopt standards and other regulatory measures which promote the increased use of energy-efficient designs and technologies and sustainable utilization of natural resources in an economically and environmentally appropriate way;

(d) Formulate appropriate land-use policies and introduce planning regulations specially aimed at protection of eco-sensitive zones against physical disruption by construction and construction-related activities;

(e) Promote the use of labour-intensive construction and maintenance technologies which generate employment in the construction sector for the underemployed labour force found in most large cities while at the same time promoting the development of skills in the construction sector;

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(f) Develop policies and practices to reach informal sector and self-help housing builders by adopting measures to increase the affordability of building materials on the part of the urban and rural poor, through, inter alia, credit schemes and bulk procurement of building materials for sale to small-scale builders and communities.

73. All countries should:

(a) Promote the free exchange of information on the whole range of environmental and health aspects of construction including the development and dissemination of databases on the adverse environmental effects of building materials through the collaborative efforts of the private and public sectors;

(b) Promote the development and dissemination of databases on the adverse environmental and health effects of building materials and introduce legislation and financial incentives to promote recycling of energy-intensive materials in the construction industry and conservation of waste energy in building-materials production methods;

(c) Promote the use of economic instruments, such as product charges, to discourage the use of construction materials and products which create pollution during their life-cycle;

(d) Promote information exchange and appropriate technology transfer among all countries, with particular attention to developing countries, for resource management in construction, particularly for non-renewable resources;

(e) Promote research in construction industries and related activities, and establish and strengthen institutions in this sector.

4. Means of implementation

(a) Financing and cost evaluation

[74. It is roughly estimated that the construction activities of developing countries amount to about US\$ 400 billion annually and will increase by about US\$ 20 billion annually. The stream of new investments for these levels of activity and to bring in clean technologies is estimated at US\$ 40 billion annually, primarily from private sources. If 10 per cent of the new investments come from the international community, this would amount to US\$ 4 billion annually. About US\$ 3 million would be needed to strengthen international organizations.]

(b) Human resource development and capacity-building

75. Developing countries should be assisted by international support and funding agencies in upgrading the technical and managerial capacities of the small entrepreneur and the vocational skills of operatives and supervisors in

the building materials industry, using a variety of training methods. These countries should also be assisted in developing programmes to encourage the use of non-waste and clean technologies through appropriate transfer of technology.

76. General education programmes should be developed in all countries, as appropriate, to increase builder awareness of available sustainable technologies.

77. Local authorities are called upon to play a pioneering role in promoting the increased use of environmentally sound building materials and construction technologies, e.g., by pursuing an innovative procurement policy.

H. Promoting human resource development and capacity-building for human settlements development

1. Basis for action

78. Most countries, in addition to shortcomings in the availability of specialized expertise in the areas of housing, settlement management, land management, infrastructure, construction, energy, transport, and pre-disaster planning and reconstruction, face three cross-sectoral human resource development and capacity-building shortfalls. First is the absence of an enabling policy environment capable of integrating the resources and activities of the public sector, the private sector and the community, or social sector; second is the weakness of specialized training and research institutions; and third is the insufficient capacity for technical training and assistance for low-income communities, both urban and rural.

2. Objective

79. The objective is to improve human resource development and capacity-building in all countries by enhancing the personal and institutional capacity of all actors, particularly indigenous people and women, involved in human settlement development. In this regard, account should be taken of traditional cultural practices of indigenous people and their relationship to the environment.

3. Activities

80. Specific human resource development and capacity-building activities have been built into each of the programme areas of this chapter. More generally, however, additional steps should be taken to reinforce those activities. In order to do so, all countries, as appropriate should take the following action:

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(a) Strengthen the development of the human resources and of capacities of public sector institutions through technical assistance and international cooperation so as to achieve by the year 2000 substantial improvement in the efficiency of governmental activities;

(b) Create an enabling policy environment supportive of the partnership between the public, private and community sectors;

(c) Provide enhanced training and technical assistance to institutions providing training for technicians, professionals and administrators, and appointed, elected, and professional members of local governments and strengthen their capacity to address priority training needs, particularly in regard to social, economic and environmental aspects of human settlements development;

(d) Provide direct assistance for human settlement development at the community level, inter alia, by:

- (i) Strengthening and promoting programmes for social mobilization and awareness raising of the potential of women and youth in human settlements activities;
- (ii) Facilitating coordination of the activities of women, youth, community groups, and non-governmental organizations in human settlements development;
- (iii) Promoting research on women's programmes and other groups, and evaluate progress made with a view to identifying bottlenecks and needed assistance;

(e) Promote the inclusion of integrated environmental management into general local government activities.

81. Both international organizations and non-governmental organizations should support the above activities by, inter alia, strengthening subregional training institutions, providing updated training materials and disseminating the results of successful human resource and capacity-building activities, programmes and projects.

4. Means of implementation

(a) Financing and cost evaluation

[82. International technical assistance to support national programmes is estimated at about US\$ 60 million annually; US\$ 5 million will be needed for strengthening international institutions.]

(b) Scientific and technological means

83. Both formal training and non-formal types of human resource development and capacity-building programmes should be combined, and use should be made of user-oriented training methods, up-to-date training materials and modern audio-visual communication systems.

Notes

1/ No aggregate figures are available on internal expenditure or official development assistance on human settlements. However, data available in the World Development Report, 1991, for 16 low-income developing countries show that the percentage of central government expenditure on housing, amenities, and social security and welfare for 1989 averaged 5.6 per cent, with a high of 15.1 per cent in the case of Sri Lanka, which has embarked on a vigorous housing programme. In OECD industrialized countries, during the same year, the percentage of central government expenditure on housing, amenities and social security and welfare ranged from a minimum of 29.3 per cent to a maximum of 49.4 per cent, with an average of 39 per cent (World Bank, World Development Report, 1991, World Development Indicators, table 11 (Washington, D.C., 1991), forthcoming).

2/ See the report of the Director-General for Development and International Economic Cooperation, containing preliminary statistical data on operational activities of the United Nations system for 1988 (A/44/324-E/1989/106/Add.4, annex).

3/ World Bank Annual Report, 1991 (Washington, D.C., 1991).

4/ UNDP, "Reported investment commitments related to UNDP-assisted projects, 1988", table 1, "Sectoral distribution of investment commitment in 1988-1989".

5/ A pilot programme of this type, the City Data Programme (CDP), is already in operation in the United Nations Centre on Human Settlements (Habitat) aimed at the production and dissemination to participating cities of micro-computer application software designed to store, process and retrieve city data for local, national and international exchange and dissemination.

6/ This calls for integrated land-resource management policies, which are also addressed in section II, chapter 2 of Agenda 21 (Integrated approach to planning and management of land resources).

7/ Estimates of the Office of the United Nations Disaster Relief Coordinator.

Notes (continued)

8/ The goals of the International Decade for Natural Disaster Reduction, set out in the annex to General Assembly resolution 44/236 are as follows:

(a) To improve the capacity of each country to mitigate the effects of natural disasters expeditiously and effectively, paying special attention to assisting developing countries in the assessment of disaster damage potential and in the establishment of early warning systems and disaster-resistant structures when and where needed;

(b) To devise appropriate guidelines and strategies for applying existing scientific and technical knowledge, taking into account the cultural and economic diversity among nations;

(c) To foster scientific and engineering endeavours aimed at closing critical gaps in knowledge in order to reduce loss of life and property;

(d) To disseminate existing and new technical information related to measures for the assessment, prediction and mitigation of natural disasters;

(e) To develop measures for the assessment, prediction, prevention and mitigation of natural disasters through programmes of technical assistance and technology transfer, demonstration projects, and education and training, tailored to specific disasters and locations, and to evaluate the effectiveness of those programmes.
